

Amendments to the Specification:

Please replace the paragraph beginning on page 5, line 1, with the following rewritten paragraph:

In order to avoid the formation of bubbles in one-component polyurethane sealants and adhesives there are a variety of possibilities. On the one hand some or all of the isocyanate end groups of the prepolymer can be converted to alkoxy silane end groups by reacting them with, for example, an aminoalkyl-alkoxy silane. This produces an alkoxy silane-terminal prepolymer, which likewise cures by contact with moisture via hydrolysis of the alkoxy silane groups and subsequent condensation of the silanol groups to form siloxane moieties. This curing mechanism does not form CO₂, and accordingly there are fewer bubbles formed, or none. Crosslinking via alkoxy silane groups does, however, lead to products having a low ~~breaking~~ elongation at break and low strengths. EP 1 093 482 describes polyurethanes based on polyols of high molecular weight, with a narrow molar weight distribution and an OH functionality in the vicinity of 2. In order to avoid bubbles it is possible for some or all of the isocyanate end groups of the prepolymer to be reacted with organosilanes such as aminoalkyl-alkoxy silanes, for example. As already mentioned, it is not possible in this way to formulate polyurethanes having high elongations and strengths. Accordingly the sole example of that patent, a system ~~which~~ that cures predominantly by way of alkoxy silanes, has a tensile strength of only 0.49 MPa with a ~~breaking~~ an elongation at break of 276%.

Please replace the paragraph beginning on page 6, line 7, with the following rewritten paragraph:

It was an object of the present invention to provide compositions which, starting from only one or a few high molecular weight polyurethane prepolymers, cover a large spectrum of mechanical strengths, and which have additional advantages over the prior art. Thus on the

one hand the desire is for products which combine a low elasticity modulus, high elongation and good resilience with a very dry surface and are therefore suitable as construction sealants for the sealing of joints; on the other hand there is a need for highly flexible products which cure quickly and without bubbles, have high to very high mechanical strengths and are therefore suitable as adhesives for all kinds of industrial applications. These compositions ought at the same time to have a very low processing viscosity, thereby allowing the formulation of products which can be applied with relatively little force applied, which exhibit short cut-off string ~~rupture~~ on application (so that the surroundings are not soiled with the product when the application tip is placed down and drawn away), and contain a small amount or none at all of solvents and plasticizers, which is advantageous not only for the adhesion properties of the product but also from environmental standpoints, since not only the solvents (VOCs = volatile organic compounds) but also the plasticizers, generally phthalate compounds, are not unproblematic for the environment. Furthermore, any plasticizers present tend to migrate from the composition when applied to porous substrates such as natural stone slabs and when overcoated with paints. As a result it is possible, for example, for unattractive discolorations of the substrate to appear alongside a joint, or a coating becomes soft and tacky.

Please replace the paragraph beginning on page 7, line 10, with the following rewritten paragraph:

With the combination described here of specific, high molecular weight polyurethane prepolymer prepared starting from specific linear, long-chain polyoxyalkylene polyols with a low degree of unsaturation and polyaldimines it is possible, by varying and combining different polyaldimines with only a few prepolymers, to formulate different highly flexible products having a very broad spectrum of mechanical strength (tensile strength, for example, in the range from approximately 1 to more than 20 MPa) and having ~~breaking~~ elongations at

break of up to more than 1000%, these products being stable on storage in appropriate packaging in the absence of moisture, having a low processing viscosity, curing rapidly and without bubbles on contact with moisture, and having a very dry surface in the cured state.

Please replace the paragraph beginning on page 10, line 8, with the following rewritten paragraph:

The polyol A1 is a linear polyoxyalkylene polyol having a total degree of unsaturation of < 0.04 meq/g, preferably < 0.02 meq/g and more preferably < 0.017 meq/g. In one preferred embodiment, the polyol A1 has a molecular weight of from 2000 to 30 000 g/mol. In another embodiment, the polyol A1 has a molecular weight of from 2000 to 20 000 g/mol.

Please replace the paragraph beginning on page 22, line 1, with the following rewritten paragraph:

Tensile strength, ~~breaking~~ elongation at break and elasticity modulus at 0.5-5% elongation were determined on films cured for 7 days at 23°C and 50% relative humidity in accordance with DIN EN 53504 (traction speed: 200 mm/min).

Please replace the paragraph beginning on page 22, line 14, with the following rewritten paragraph:

The ~~expression~~ extrusion force was determined on aluminum cartridges having a diameter of 45 mm, the sealant being pressed at the tip of the cartridge through an opening of 3 mm. ~~Expression~~ Extrusion was carried out by a tensile testing machine at a speed of 60 mm/min.

Please replace the paragraph beginning on page 22, line 20, with the following rewritten paragraph:

~~String rupture~~ Cut-off string was determined by causing a cylindrical penetration element with a diameter of 2 cm to penetrate to a depth of 0.5 cm into the sealant (film thickness: 1 cm, temperature 20°C) and extracting it again after about 1 second at constant

speed (25 cm in 4 seconds). The length of the string of sealant remaining on the penetration element, defined as ~~string rupture~~cut-off string, was measured with a ruler to an accuracy of 1 mm. The procedure was repeated three times and the mean value of the measurements was determined as the result.

Please replace the paragraph beginning on page 22, line 35, with the following rewritten paragraph:

The curing rate of ~~cure through volume~~ was determined at 23°C and 50% relative humidity on a PTFE substrate.

Please replace the paragraph beginning on page 30, line 6, with the following rewritten paragraph:

Table 1

Example	1	2	3	4	5 compara- tive	6 compara- tive
Prepolymer	P1	P1	P1	P1	P2	P1
Polyaldimine(s), ratio (pbw/pbw)	A1	A2	A3	A4	A4	—
NCO content (% by weight)	2.00	2.00	2.00	2.00	2.06	2.00
Viscosity before storage (Pa·s)	28	27	26	27	91	28
Viscosity after storage (Pa·s)	32	33	29	32	96	31
Skinning time (min.)	52	33	43	35	30	600
Bubble formation	none	none	none	none	none	many
Tensile strength (MPa)	4.2	8.3	8.8	12.1	4.9	n.m.
Breaking elongation <u>Elongation</u> at break (%)	1000	1300	1300	1300	1400	n.m.
Elasticity modulus 0.5-5% (MPa)	1.6	1.9	2.0	13.1	15.6	n.m.

(n.m. = not measurable)

Please replace the paragraph beginning on page 31, line 7, with the following rewritten paragraph:

Table 2

Example	7	8 comparative
Prepolymer	P3	P4
Polyaldimine	A4	A4
NCO content (% by weight)	3.61	3.59
Viscosity before storage (Pa·s)	37	34
Viscosity after storage (Pa·s)	38	35
Skinning time (min.)	32	30
Bubble formation	none	none
Tensile strength (MPa)	11.3	7.2
Breaking elongation Elongation at break (%)	710	700
Elasticity modulus 0.5-5% (MPa)	26.6	28.8

Please replace the paragraph beginning on page 33, line 1, with the following rewritten paragraph:

Table 3

Example	9	10 compara- tive	11 compara- tive	12	13	14	15 compara- tive	16 compara- tive
Prepolymer	P1	P5	P5	P1	P1	P1	P6	P6
Polyaldimine(s), ratio (pbw/pbw)	A2/A5, 2/1	A2	—	A2/A5, 7/1	A6/A5, 7/1	A4/A5, 7/1	A2	—
Total functionality prepolymer	2.0	2.3	2.3	2.0	2.0	2.0	2.1	2.1
Total functionality polyaldimines	2.3	2.0	(2.0)	2.1	2.1	2.1	2.0	(2.0)
NCO content (% by weight)	2.00	2.30	2.30	2.00	2.00	2.00	2.22	2.22
Viscosity before storage (Pa·s)	30	87	92	28	25	28	48	49
Viscosity after storage (Pa·s)	38	108	105	35	29	32	63	58
Skinning time (min.)	24	12	240	23	20	23	15	320
Bubble formation	none	none	some	none	none	none	none	many
Tensile strength (MPa)	2.3	2.6	2.3	4.1	2.8	5.0	3.7	n.m.
Breaking elongation Elongation at break (%)	270	230	190	620	640	450	400	n.m.
Elasticity modulus 0.5-5% (MPa)	2.4	3.0	5.2	2.0	1.4	9.4	3.0	n.m.

(n.m. = not measurable)

Please replace the paragraph beginning on page 34, line 18, with the following rewritten paragraph:

Table 4

Example	17	18 comparative
Prepolymer	P7	P7
Polyaldimine(s), ratio (pbw/pbw)	A4	—
NCO content (% by weight)	2.12	2.12
Viscosity before storage (Pa·s)	11	11
Viscosity after storage (Pa·s)	12	12
Skinning time (min.)	37	> 600
Bubble formation	none	some
Tensile strength (MPa)	10.2	remains tacky, pasty; n.m.
Breaking elongation Elongation at break (%)	1300	
Elasticity modulus 0.5-5% (MPa)	10.3	

(n.m. = not measurable)

Please replace the paragraph beginning on page 35, line 21, with the following rewritten paragraph:

Table 5

Example	19	20	21 comparative
Prepolymer	P8	P8	P8
Polyaldimine(s), ratio (pbw/pbw)	A4	A4/A5, 7/1	—
NCO content (% by weight)	0.88	0.88	0.88
Viscosity before storage (Pa·s)	58	66	60
Viscosity after storage (Pa·s)	72	82	70
Skinning time (min.)	52	48	> 600
Bubble formation	none	none	some
Tensile strength (MPa)	4.2	4.7	remains soft, pasty; n.m.
Breaking elongation Elongation at break (%)	> 1300	1040	
Elasticity modulus 0.5-5% (MPa)	2.9	2.4	

(n.m. = not measurable)

Please replace the paragraph beginning on page 36, line 1, with the following rewritten paragraph:

Table 6

Example	22	23	24	25 compara- tive	26	27 compara- tive	28	29 compara- tive	30	31 compara- tive
Prepolymer	P9	P9	P9	P9	P10	P10	P11	P11	P12	P12
Polyaldimine(s), ratio (pbw/pbw)	A2	A3	A4	—	A2/A5, 7/1	—	A2/A5, 7/1	—	A2/A5, 3/1	—
NCO content (% by weight)	3.70	3.70	3.70	3.70	3.76	3.76	4.53	4.53	5.01	5.01
Viscosity before storage (Pa·s)	36	35	36	38	43	46	56	58	46	48
Viscosity after storage (Pa·s)	43	37	40	43	50	51	65	64	55	52
Skinning time (min.)	41	51	42	360	45	420	42	360	41	480
Bubble formation	none	none	none	very many	none	very many	none	very many	none	very many
Tensile strength (MPa)	15.0	14.5	17.0	n.m.	14.1	n.m.	15.6	n.m.	18.4	n.m.
Breaking elongation at break (%)	790	770	810	n.m.	500	n.m.	600	n.m.	330	n.m.
Elasticity modulus 0.5-5% (MPa)	5.8	4.1	33.1	n.m.	5.3	n.m.	10.5	n.m.	40.0	n.m.

(n.m. = not measurable)

Please replace the paragraph beginning on page 39, line 23, with the following
rewritten paragraph:

Table 7

Example	32	33 compara- tive	34 compara- tive
Surface quality after curing	dry	dry	tacky
Skinning time (min.)	250	90	135
Volume curing rate (mm/day)	1.8	2.4	2.5
Shore A hardness	47	44	18
String rupture Cut-off string (mm)	28	40	15
Expression Extrusion force (N)	443	558	271
Storage stability	OK	OK	Ok
Tensile strength (MPa)	2.2	3.0	0.3
Breaking elongation Elongation at break (%)	880	1080	250
Stress at 100% elongation (MPa)	0.98	0.81	0.18